# SOIL CONSERVATION DIGEST

Vol. 3 - No. 8 May 1937

REGION TEN
CALIFORNIA-NEVADA NEWSLETTER
Issued at Santa Paula, California

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service

| | | |
|---|---|---|
| Harry E. Reddick | Regional Conservator | Santa Paula |
| Charles W. Petit | District Manager | Santa Paula |
| R. B. Cozzens | District Manager | Watsonville |
| George Hardman | Nevada State Coordinator | Reno |

## SUGGESTIONS INVITED

Erosion control under Government direction was started in California the early part of 1934. After three years of work with some six hundred cooperators, the Service feels that definite progress has been made. It appreciates that there are still problems that are not solved.

Some cooperators have expressed their opinions of the work that has been done on their farms. The Service would like to have letters from all cooperators.

Cooperators are urged to write letters to their Project Managers and include, with their opinions, any suggestions that may occur to them for making the work more effective.

The names of the Project Managers are given below. Write them today!

| | |
|---|---|
| Las Posas<br>Lompoc<br>Arroyo Grande | H. R. McConnell<br>Santa Paula, California |
| Aliso Creek<br>Vista | Charles W. Wilson<br>City Hall Building<br>Santa Ana, California |
| Placerville | Glenn E. Paxton<br>Placerville, California |
| Vacaville<br>Sebastopol | Dr. Logan S. Carter<br>Vacaville, California |
| Ursine<br>Pahranagat Valley<br>Panaca | Ray S. Carberry<br>Caliente, Nevada |
| La Habra<br>Cucamonga<br>Palos Verdes | R. A. Floyd<br>Bank of America Building<br>Whittier, California |
| Corralitos | Geo. Gosline<br>Watsonville, California |

# FIRE - CONSERVATION'S ENEMY

By T. B. Plair, Regional Forester

**Fire**

This country has had a long history of destructive fires on grass, brush, and timber lands. At first only the direct losses from such fires were considered, the thousands of potential board feet of lumber gone up in smoke, and the loss of forage on grass lands. With the increase in the knowledge of soil erosion and floods it is now realized that the direct loss is by no means the only or necessarily most important effect of such fires. Destruction of the protective cover given to the soil by trees, shrubs, and grass leaves it a prey to rain. Instead of penetrating into the soil, rains run off down the slope, removing topsoil, gouging out gullies, and depositing debris in reservoirs, on highways, and fields.

**Causes of Fire**

Most grass, brush, and forest fires can be put down to sheer carelessness. A lighted match is tossed into dry grass - a camp fire is left burning or smoldering and in a few hours hundreds of acres of brush or timber is ablaze - a burning brush pile, coupled with low humidity and a high wind, sends sparks flying, igniting dozens of fires. Such fires frequently cause loss of life, homes, barns, and game in addition to wiping out timber, watershed, and grazing values.

**Damage of Fire**

It is easy enough to appreciate the destruction of a splendid stand of timber by fire. It is more difficult to appreciate the effects of a brush fire until rains beat down on the unprotected land, sending flood waters raging down the slopes.

Any area where the native vegetation is destroyed by fire becomes a so-called "wildlife desert". In addition to removing all food and protective cover essential to the existence of upland game birds and mammals, such fires sometimes trap birds and animals in the enveloping smoke and flame.

The time of the year to use extreme caution with fire is here and every means should be used to protect grass, brush, and timber areas.

**Prevention of Fire**

Clean up debris where it presents a fire hazard. Use motorized equipment with care in areas of dry grass and grain. Do not burn brush nor use fire to "clean up". Last year one of California's worst foothill fires was caused by a man "cleaning up" his

chicken yard. If care is taken with fire the inexcusable waste of trees, grass, brush, and game will come to a halt while there is yet something to save. Everyone realizes by now that our natural resources are not inexhaustible.

* * *

BUNKERVILLE CAMP COMPLETES SIXTEEN MONTHS WORK

Erosion Control Activities

The closing of the Bunkerville Soil Conservation Service-ECW Camp on April 24 completed a program of about sixteen months of erosion control activities during which the recommendations of the Virgin Valley Voluntary Soil Conservation Association Committee were followed as closely as policy, finances, etc., would permit. As a result of this close cooperation, together with the initiativeness of the Soil Conservation Service technicians, numerous expressions of satisfaction with the work accomplished have emanated from the committee and cooperators.

Control Measures Effective

It is a well known fact that there is much yet to be done in the Virgin Valley before it's citizens can feel their valuable lands are permanently protected against the menace of river floods and cloudburst run-offs, both of which contribute largely to the erosion problems, but it has been quite clearly established that the Service's control measures have demonstrated their effectiveness so well that a sense of security might ultimately be achieved if these object lessons become an integral part of a future well-planned program to be executed by the citizenry or any other agency.

* * *

Crop Protection

Making one run of a grain drill around the edge of cultivated fields bordering brush areas ten days preceding the planting of beans is again being practiced by G. Nicolai in the Lompoc Project.

Last year he found that this grain furnished green feed for quail and rabbits and proved an effective protection to his young beans when they came through the soil. The damage to beans near brush areas amounts to thousands of dollars each season throughout California.

* * *

## ALISO CREEK COOPERATORS GIVE IMPETUS TO WILDLIFE PROGRAM

By Lee O. Hunt, Project Forester

The wildlife phase of the Soil Conservation Program is gaining impetus as shown by a dozen or more cooperators in the Aliso Creek Area signing agreements which give recognition to a definite need for wildlife encouragement. Providing cover and feeding areas and, of even more concern in Southern California, watering stations is being encouraged wherever areas are available.

Cooperator Promotes Program

One of our cooperators, who has considerable acreage in pasture land and brushy watershed, has promoted a wildlife program worthy of inspection and praise. Twelve watering stations have been constructed and several feed plots made for the encouragement of wildlife - chiefly quail. These two features have been well distributed over the ranch and, cognizance has been given to the location of water and feed at such points as to be most beneficial and accessible in relation to cover and nesting areas.

Watering Stations

The watering stations are constructed by placing on the ground a 50 gallon metal tank with a pipe outlet at the bottom. The tanks are second-hand drums that cost about one dollar each. An outlet pipe leads to a shallow galvanized iron basin and is fitted with a flat-head stop cock and float to keep the water at a constant level in the basin. All the metal was treated to prevent rusting and the cock and float covered to keep dirt from clogging the mechanism. It is anticipated that the drums will have to be filled from tank trucks from time to time. Most of the stations are now in operation and have been located by some quail in the area and are being used by them. Total cost of the material is about $3.00 each.

Feed Plots

Feed plots were planted to some of the common native species that are high in seed production and utilized by quail, such as the bush sunflower and wild buckwheat.

The cooperator and property herein discussed is an outstanding example of what can be done when interest in wildlife is created. In return for protection and encouragement of wildlife, there will be returns in the form of insect control, hunting privileges, aid to erosion control, and the color that wildlife brings to any farm.

# RAISING EUCALYPTUS TREES FROM SEED

By Dirk Vanderwal
Assistant Nursery Superintendent

It is not difficult to raise Eucalyptus plants from seed, although where only a few plants are needed it may be more economical to buy them from a commercial nursery. The rancher who customarily sows flower and vegetable seed in flats or seed pans for the home garden can propagate Eucalyptus trees in practically the same manner. May to June is the best time to start them.

**Securing Seed**

Seed may either be bought from a seedsman or collected by the rancher himself. Where only true-to-name plants are wanted and no seed trees are easily accessible or properly identified, it may be best to purchase the seed.

**The Blue Gum as an Example**

The Blue Gum (Eucalyptus globulus) is the fastest growing and most widely planted Eucalypt in California, although it is best suited to coastal areas. Under normal conditions of culture and growth, seed of this species sown in June will produce seedlings that may be transplanted to flats, pots, or cans in four to six weeks. These will be of proper size (6 to 10 inches in height) for planting in the open ground during November and December in the south, or early spring in the north.

**Amount of Seed Needed**

Blue Gum seed is 1/16 to 1/8 inch in diameter, slightly longer than broad. It is shiny, black and somewhat irregular in shape. One rounded tablespoonful (about $\frac{1}{4}$ ounce) is ample to sow one standard flat. With good seed and little loss through damping-off, one flat should provide four hundred or more vigorous seedlings ready for the first transplanting.

**Collecting Seed**

Blue Gum seed is produced in rough, warty capsules or pods about three-fourths of an inch in diameter, flat-topped and hemispherical in shape. The pods, single, or in short-stemmed groups of two or three in the axils of the leaves, are found on older branchlets just inside the circle of newest growth. Seed pods in various stages of development may be found on veteran trees at any time of the year, but probably a greater percentage of mature pods can be obtained early in the summer.

Blue Gum pods of the previous summer's production may be conveniently harvested in June, and the seed sown immediately. Branchlets bearing a majority

of mature but not over-mature pods should be clipped off and placed in a tight tray or on a piece of canvas or sugar sack and exposed to the sun. If the valves of a pod (an "x" marking on the flat side of the pod) have already split open, the seed is gone and such a pod is useless. The buds are four-angled and slender, light bluish-green in color and usually covered with a white bloom. They may be mistaken for seed pods. Often a single branchlet at this time of year will have on it buds, flowers, and empty pods, as well as some mature pods about ready to open and drop seed. Large, plump pods should be selected from desirable parent trees.

Extracting Seed

A few hours after removal from the tree and exposure to the sun, the valves on mature Blue Gum pods will begin to open and release the seed. After two or three days the branches should be shaken to jar loose the rest of the seed and then discarded. The seed should then be screened to separate it from the litter. Winnowing will remove the lighter chaff, although there is no harm in sowing seed and chaff together if allowance is made for this dilution. Pouring the seed from one dish to another and blowing across the stream of seed is satisfactory for winnowing small lots of seed.

Other Eucalypts

Seed of most of the other Eucalypts commonly grown, such as the Red Gum (E. rostrata), Gray Gum (E. tereticornis), Sugar Gum (E. corynocalyx) and Desert Gum (E. rudis) may be harvested in much the same manner. Their seeds (and pods, too) are much smaller and somewhat less fertile than the Blue Gum. These seeds are brown and not readily distinguished from their respective chaffs by color, or cleaned of chaff by winnowing.

Container for Sowing

The container may be the usual nursery flat (18 by 18 inches), or any shallow box. It should be from $2\frac{1}{2}$ to 4 inches deep and have cracks between the bottom boards for drainage.

Soil For Seed Flats

The soil used should be light and porous. Any light, sandy loam or a mixture of equal parts of loam and sand is suitable. The moisture condition of the soil should be such that, if the soil is squeezed in the hand, it will hold its shape; but, if crumpled between the fingers, it will again break into small particles. If drier than this, it cannot be firmed properly; if wetter, it will pack when tamped. The soil, at least for the top inch of the flat, should be screened through a one-eighth mesh screen.

Preparing Seed Flats

In filling, particularly if the container is deep, it is well to have some drainage material, such as gravel or coarse soil, in the bottom. Then the flat should be heaped full of prepared soil and levelled off with a straightedge, making sure by tamping with the finger tips that the corners and edges are equally full. Next the soil should be lightly firmed with a smooth block of wood, after which the soil should not be more than one-half inch below the top of the container. If lower than this, air circulation is hindered and trouble with damping-off is more likely to occur.

The soil may then be thoroughly watered (saturated) and allowed to drain overnight before sowing, or it may be watered after the seed is sown. It is more desirable to water the soil before sowing, because this eliminates the likelihood of washing the seed about, causing uneven distribution. An easy way to evenly wet the soil is to barely immerse the container in a pan or tub of water for several minutes (until bubbles cease coming up).

Sowing Seed

Seed should be broadcast over the flat evenly and thinly. Probably more seed is lost through thick planting and too-deep covering than from any other reasons. Only by thin sowing can stocky seedlings be produced. If the seed is poor, thick sowing will not help; and if the seed is good, only by thin sowing can best results be expected.

Covering the Seed

After sowing, the seed should be gently pressed into the soil with a smooth block of wood. (Germination takes place only when the seed coat is in close contact with the moist soil). The seed may then be covered to a depth of not over one-eighth inch with sand or light soil. A fine screen such as a flour sieve is handy for applying this cover. In using, the screen should be held low or the particles striking the fine seeds may cause them to jump in all directions, allowing some to become buried too deeply and others not deep enough.

Temperature and Shade

The container should be placed in a temperature of from 60 to 70 degrees F. and shaded with burlap or paper. Placing in a hot-bed or cold-frame is not necessary at this time of the year, but any protection that will reduce evaporation is desirable. Therefore, it may be advisable to cover the container with a piece of glass, placing the shade material over the glass. The glass should be turned over every morning to get rid of the excess moisture which collects on the underside.

Germination

The more common species of Eucalyptus should germinate in from five to ten days after sowing in June, and be large enough for transplanting about a month later. Immediately after emergence the dense shade (paper or burlap) should be removed and the glass, if any, a little later. To allow these to remain too long will result in drawn, spindly seedlings.

Watering Seed Flats

No watering should be necessary before the seedlings are up. To help prevent damping-off after emergence, it is best to water as early in the day as possible, so that the plants may be dry by night. No rule can be laid down as to how often or how much water should be applied, but the soil should be kept as evenly moist as possible. Young Blue Gum seedlings are very susceptible to damping-off fungi, and excessive moisture should be avoided.

Transplanting Preparations

Seedlings are usually transplanted from seed flats when the first set of true leaves are formed, or soon afterwards. Blue Gum seedlings are about two inches high at this stage. In order to lessen the shock, it is desirable to harden-off the seedlings somewhat by increasing the sunlight for a few days before transplanting.

Transplanting is accomplished by removing the seedlings from the well-moistened seed flat, preserving as much of the root system as possible, and dibbling them into other flats or boxes that are at least 4" deep. The seedlings may also be planted into individual containers at this time, such as pots or tin cans with holes in the bottoms. In flats or boxes the plants should be spaced approximately two inches apart each way and the rows should be straight in each direction in order to facilitate cutting out at field planting time. A sandy loam soil containing some leaf mold or well-rotted manure is preferable.

In transplanting it is desirable that the main root (taproot) be dibbled straight down into the hole and not be bent or doubled back. The seedlings should be handled carefully by the tops rather than by the roots, and the roots must be kept moist at all times. A cloudy day is preferable to a dry, windy day for transplanting.

Care After Transplanting

The new transplants should be thoroughly watered to settle the soil about the roots and kept well shaded for several days. Heavy lath shade or cloth screens will serve the purpose. If excessive wilting occurs, the plants may be syringed lightly to increase the

humidity about the foliage. Keeping the soil saturated at this time will hinder rather than help the plants to recuperate.

After becoming established the transplants can stand practically full sun, and the shade should gradually be reduced. They will develop into stockier, less succulent and more drought-resistant plants in sunny locations, although top growth will be somewhat slower. Under lath shade, however, they will require less attention in the matter of watering, but they should be hardened to full sun before setting out.

Blocking Out

Transplants may be removed from flats for field planting by drawing a case knife through the soil in between the rows in each direction and lifting out each plant with a ball or block of soil. At this time the soil should be quite moist but not soaking wet. It is important to keep this block of soil containing the root system as intact as possible. The plants should be set in the ground without delay and with a minimum of handling, for best results.

* * *

## PROTECT WILDLIFE FROM FIRE

Early Summer Fires

Fire is not only a ruthless destroyer of vegetative cover but of wildlife as well. Young birds are killed or crippled by early summer fires. Mother birds often refuse to leave their nests during fires and in their valiant rescue efforts are burned to death. It has been said that fires kill more game than hunters.

In addition to destroying animals and birds, cover,and feed, fires along streams sometimes result in the destruction of fish. Shade and cover along the banks of the streams is destroyed, and ashes are washed into the streams. It is difficult for fish to live in such an unfavorable environment. Such streams are often rendered unsuitable for fish propagation for many years.

* * *